3637.360 TECH2007

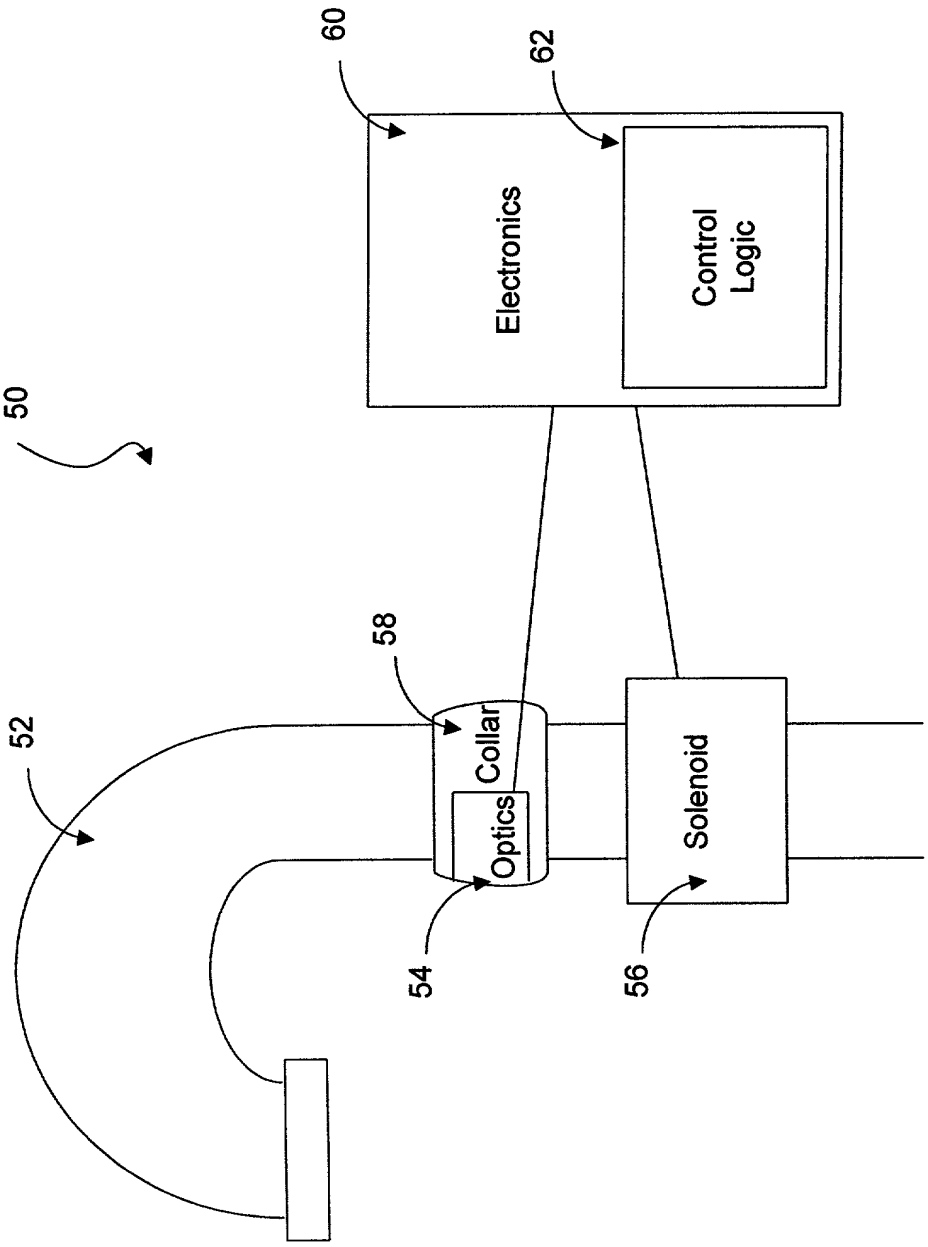



FIG. 1

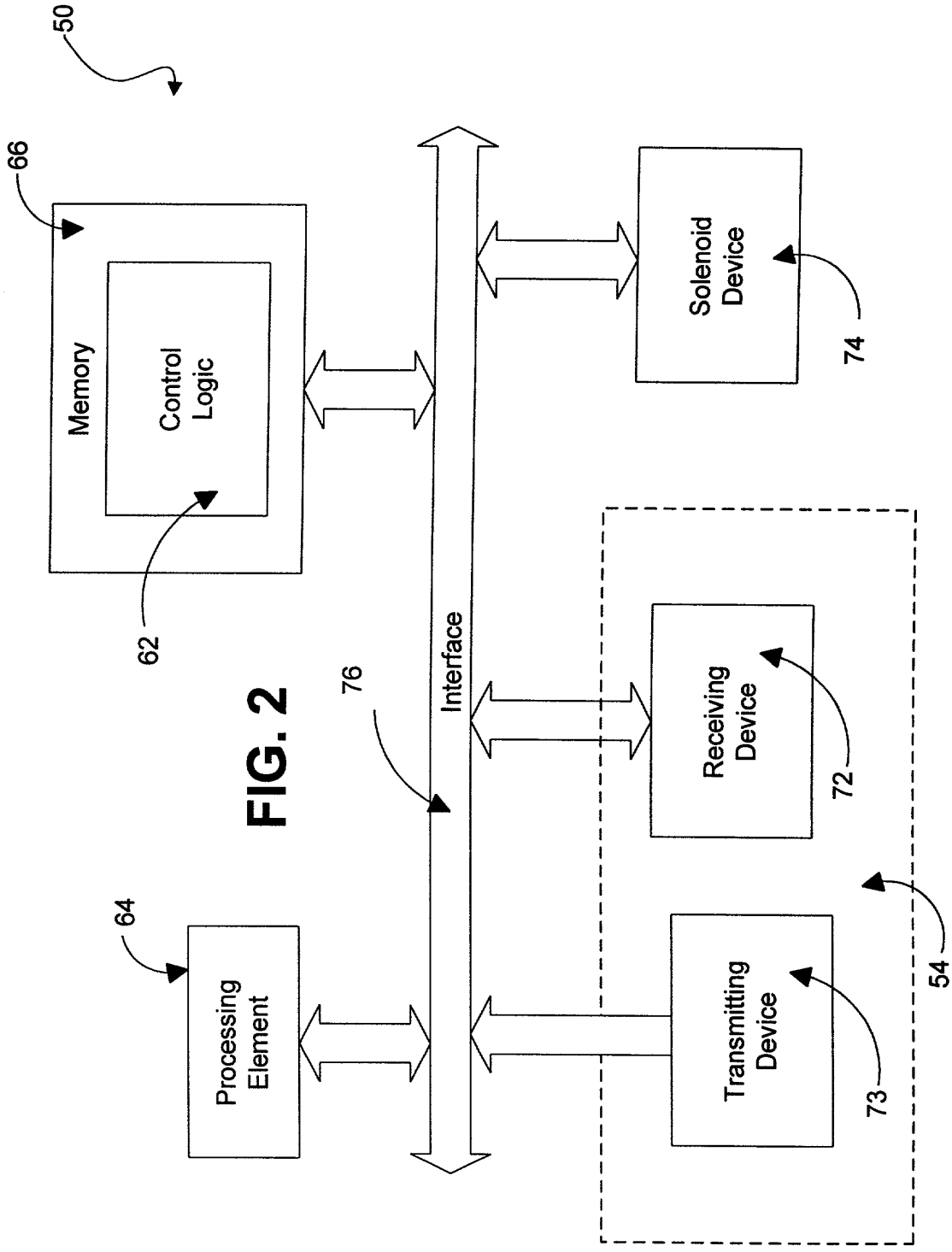

50
66
Memory
Control Logic
62
Interface
76
Solenoid Device
74
Receiving Device
72
Transmitting Device
73
54
64
Processing Element

FIG. 2

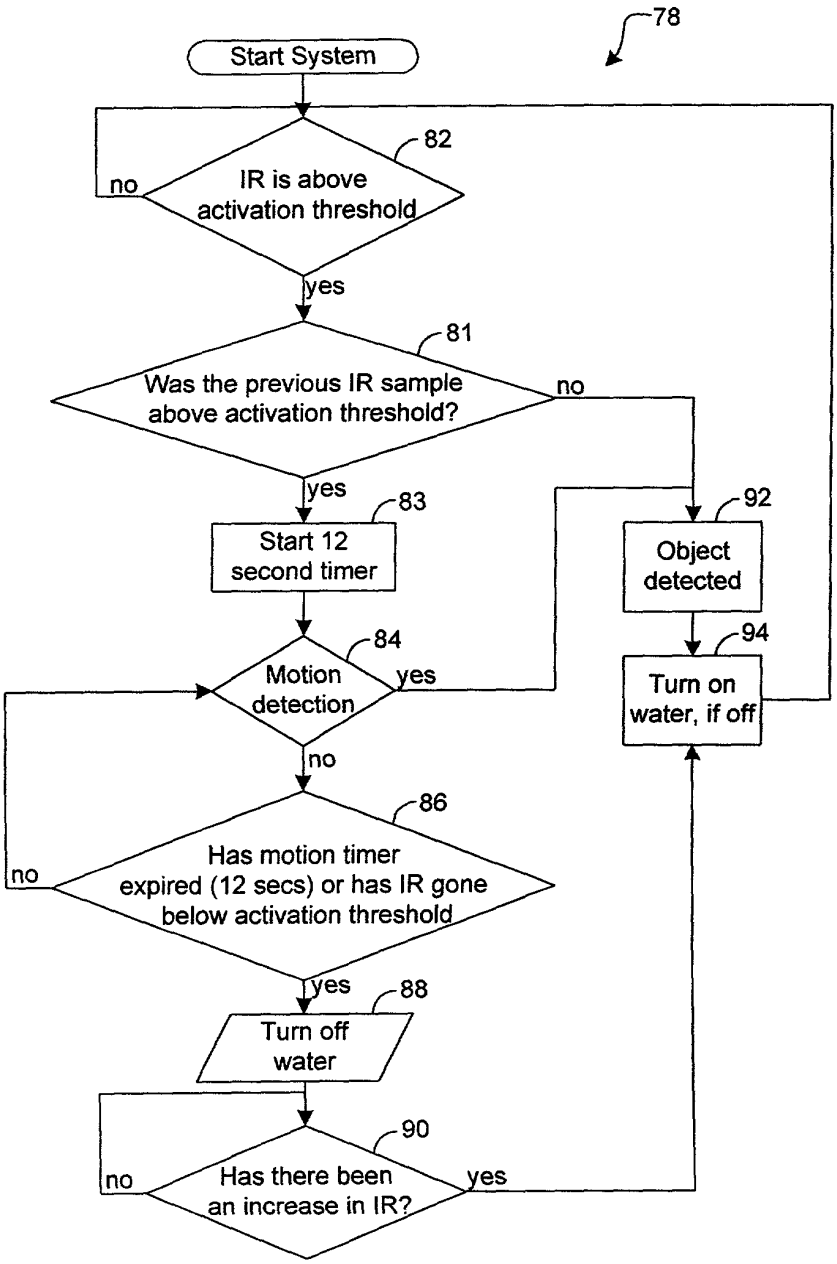

78
Start System
82
IR is above activation threshold
no
yes
81
Was the previous IR sample above activation threshold?
no
yes
83
Start 12 second timer
84
Motion detection
yes
no
86
Has motion timer expired (12 secs) or has IR gone below activation threshold
no
yes
88
Turn off water
90
Has there been an increase in IR?
no
yes
92
Object detected
94
Turn on water, if off

FIG. 3

# FIG. 4A

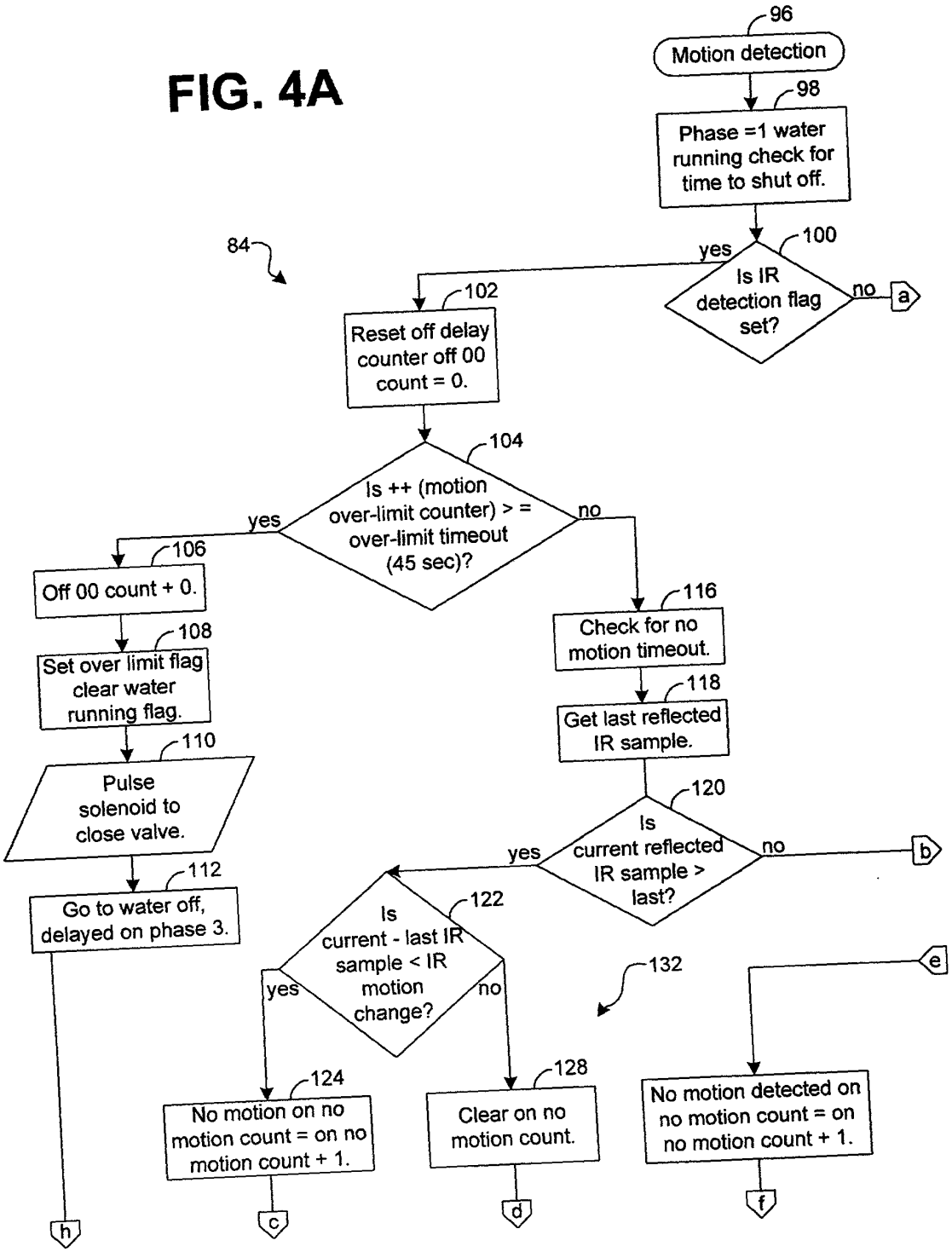
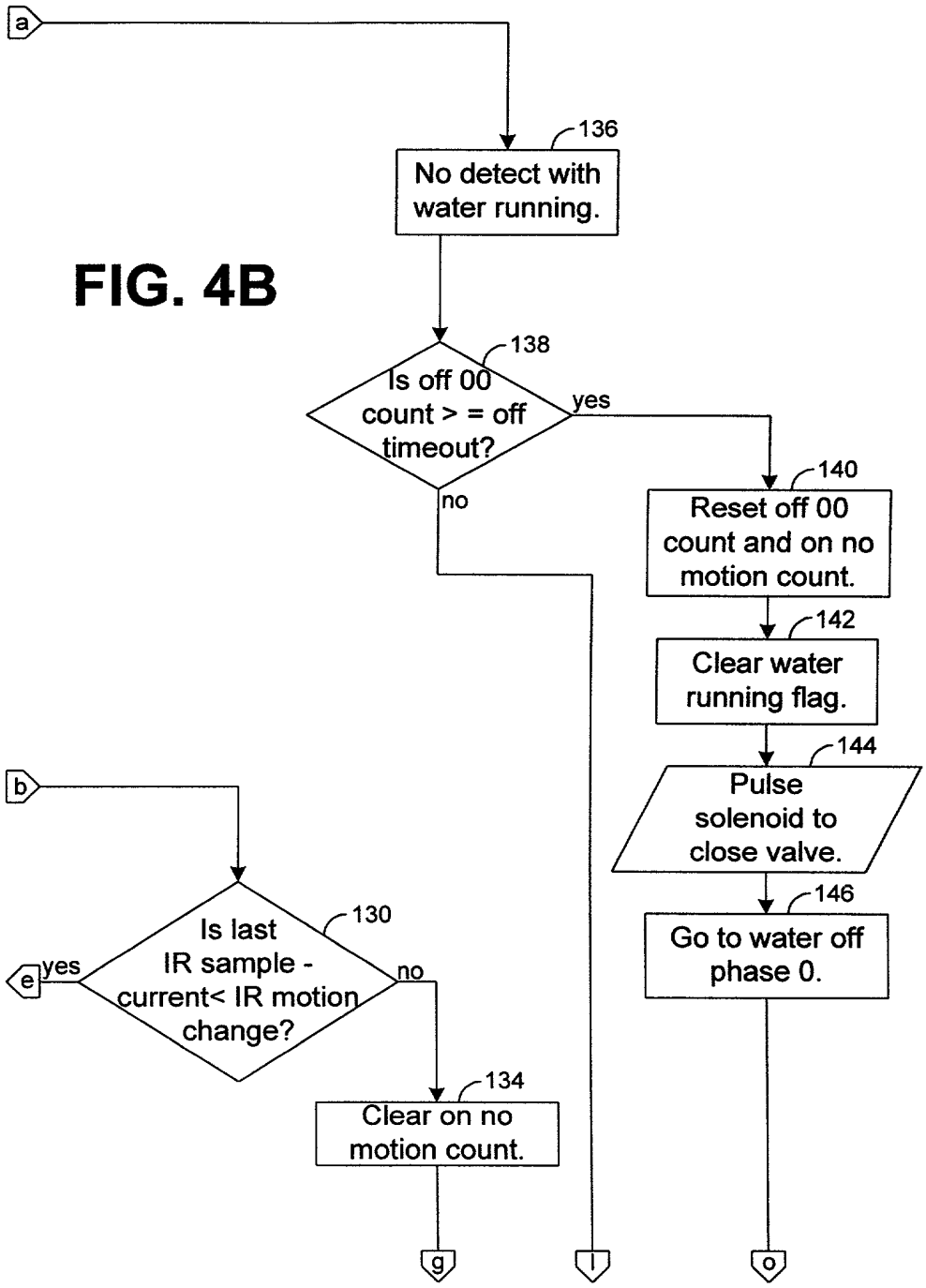

96
Motion detection
98
Phase =1 water running check for time to shut off.
100
Is IR detection flag set?
yes
no
a
84
102
Reset off delay counter off 00 count = 0.
104
Is ++ (motion over-limit counter) > = over-limit timeout (45 sec)?
yes
no
106
Off 00 count + 0.
108
Set over limit flag clear water running flag.
110
Pulse solenoid to close valve.
112
Go to water off, delayed on phase 3.
h
116
Check for no motion timeout.
118
Get last reflected IR sample.
120
Is current reflected IR sample > last?
yes
no
b
122
Is current - last IR sample < IR motion change?
yes
no
132
124
No motion on no motion count = on no motion count + 1.
c
128
Clear on no motion count.
d
e
No motion detected on no motion count = on no motion count + 1.
f

FIG. 4B


a
136
No detect with water running.
138
Is off 00 count > = off timeout?
yes
no
140
Reset off 00 count and on no motion count.
142
Clear water running flag.
144
Pulse solenoid to close valve.
146
Go to water off phase 0.
b
130
Is last IR sample - current< IR motion change?
e
yes
no
134
Clear on no motion count.
g
i
o

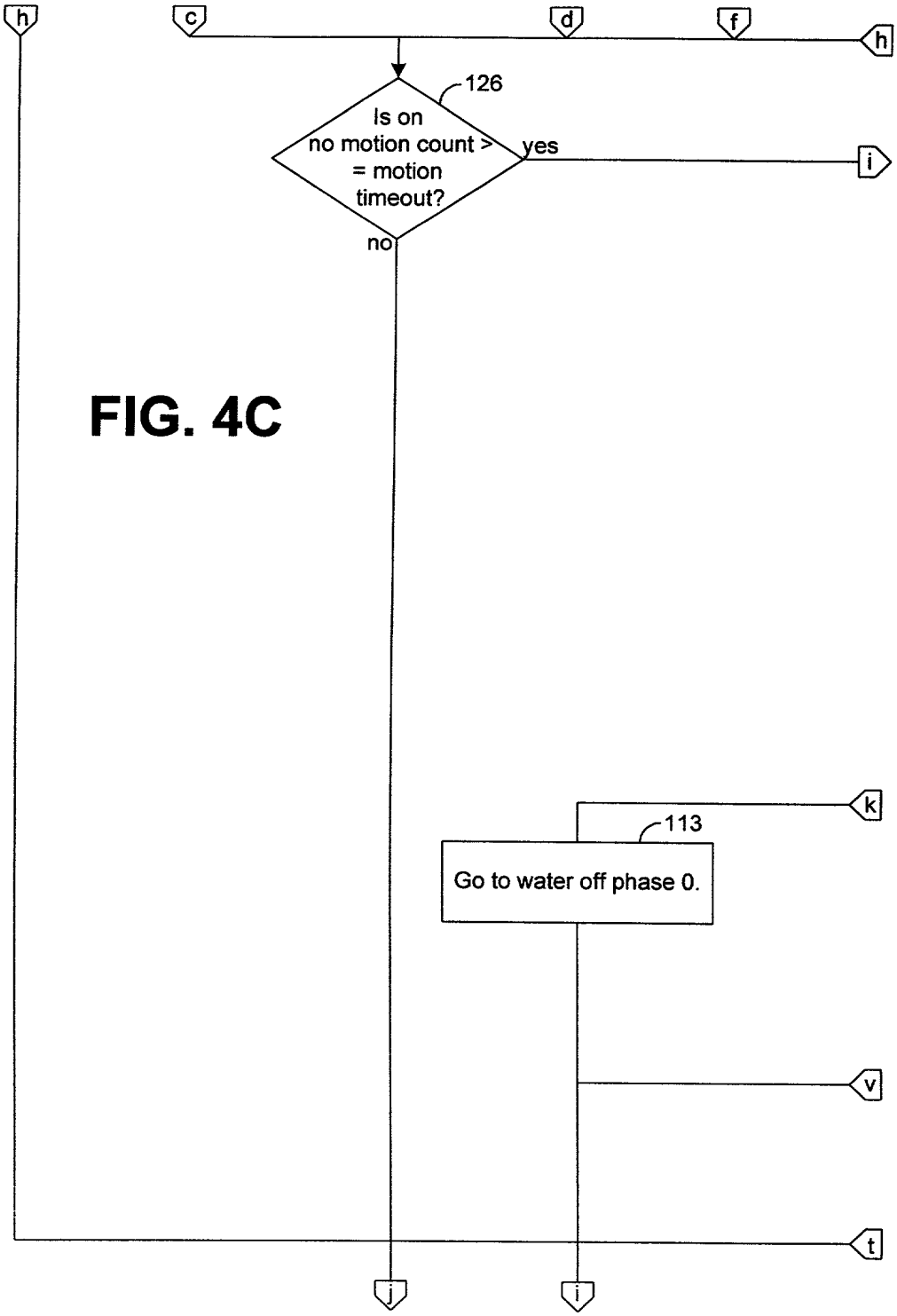

h
c
d
f
h
126
Is on no motion count > = motion timeout?
yes
i
no
k
113
Go to water off phase 0.
v
t
j
i

FIG. 4C

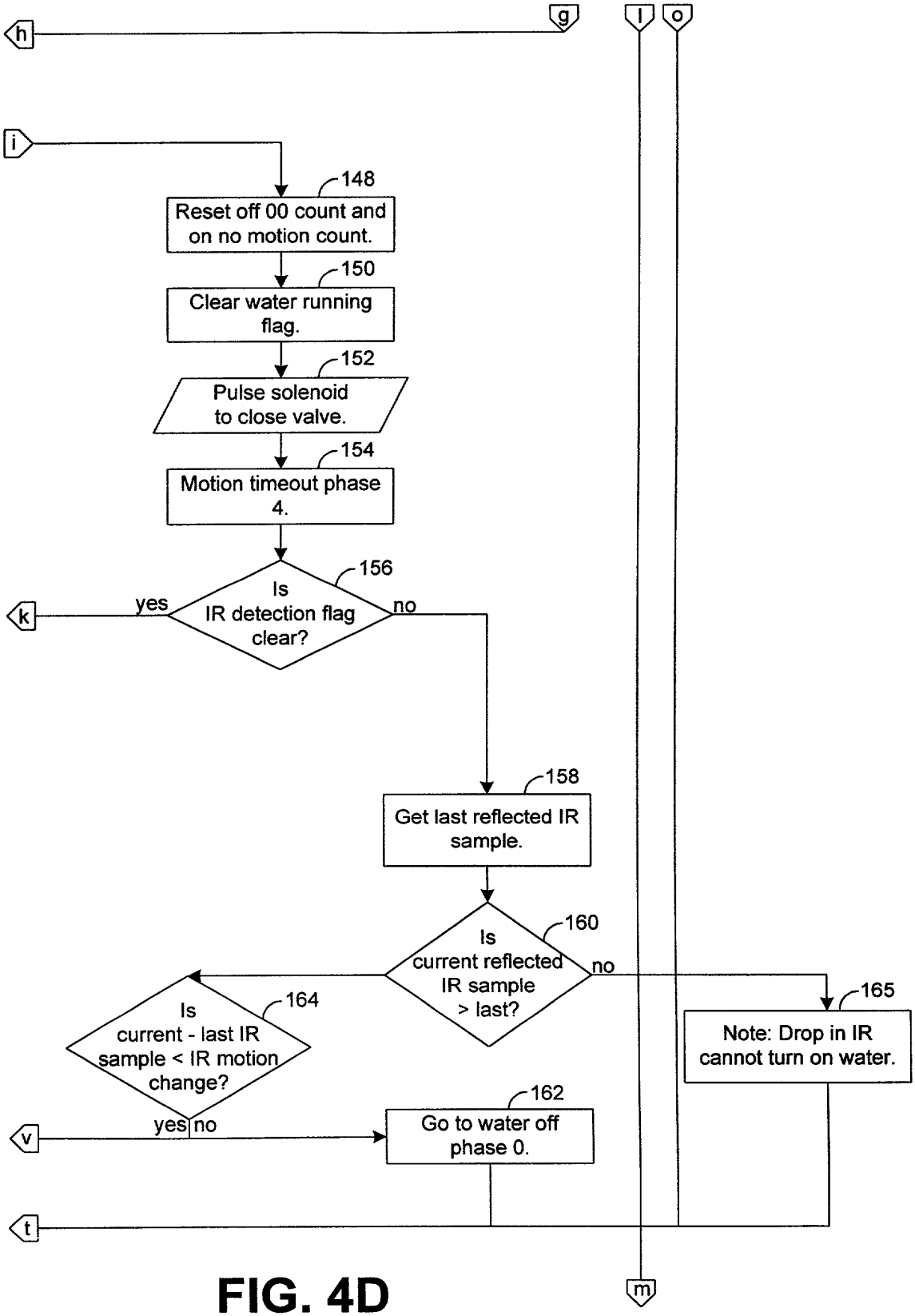

h
g
l
o
i
148
Reset off 00 count and on no motion count.
150
Clear water running flag.
152
Pulse solenoid to close valve.
154
Motion timeout phase 4.
156
Is IR detection flag clear?
yes
no
k
158
Get last reflected IR sample.
160
Is current reflected IR sample > last?
no
165
Note: Drop in IR cannot turn on water.
164
Is current - last IR sample < IR motion change?
yes
no
v
162
Go to water off phase 0.
t
m

FIG. 4D

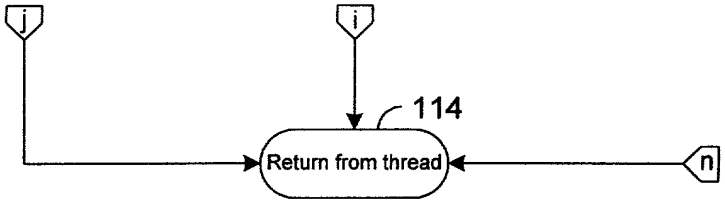



FIG. 4E

20 Feb 2004 Reception

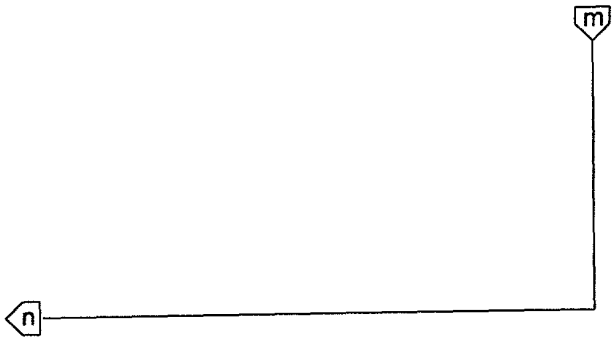



FIG. 4F